The American Museum Journal

Vol. I April–May, 1901 Nos. 9-10

A Popular Record of the Progress of the
American Museum of Natural History

Board of Trustees.

MORRIS K. JESUP	ABRAM S. HEWITT	ANSON W. HARD
ADRIAN ISELIN	ALBERT S. BICKMORE	WILLIAM ROCKEFELLER
J. PIERPONT MORGAN	ANDREW H. GREEN	GEORGE G. HAVEN
JOSEPH H. CHOATE	D. WILLIS JAMES	H. O. HAVEMEYER
WILLIAM E. DODGE	ARCHIBALD ROGERS	A. D. JUILLIARD
J. HAMPDEN ROBB	WILLIAM C. WHITNEY	FREDERICK E. HYDE
CHARLES LANIER	ELBRIDGE T. GERRY	PERCY R. PYNE
D. O. MILLS	GUSTAV E. KISSEL	HENRY F. OSBORN.

THE AMERICAN MUSEUM OF NATURAL HISTORY was established in 1869, to promote the Natural Sciences, to diffuse a more general knowledge of these sciences among the people, and thus furnish both instruction and recreation. The Museum has now a library of over 40,000 volumes on Natural History, and in its halls are exhibited collections which, in many departments of Natural Science, are unsurpassed by those of any other museum in America. The material for research is, in many lines, likewise unexcelled.

The Museum is in cordial coöperation with nearly all similar institutions in the world, among which it has already attained high rank. As, however, it is dependent upon private subscriptions and dues from its members for carrying on its work, its progress in many departments will be hastened by an increase of membership.

ANNUAL MEMBERS

Pay $10 a year and are each entitled to a Subscriber's Ticket, admitting two persons to the Museum on reserve days (Mondays and Tuesdays), and to all Receptions and Special Exhibitions, four course tickets for single admission to each lecture series, and one subscription to THE AMERICAN MUSEUM JOURNAL.

LIFE MEMBERS

Give $100, and are entitled to one Subscriber's Ticket, five course tickets, and one subscription to THE AMERICAN MUSEUM JOURNAL.

FELLOWS

Give $500, and are entitled to one Subscriber's Ticket, ten course tickets, and one subscription to THE AMERICAN MUSEUM JOURNAL.

PATRONS

Give $1000, and are entitled to one Subscriber's Ticket, five Complimentary Season Tickets, ten course tickets, and one subscription to THE AMERICAN MUSEUM JOURNAL.

Form of Bequest.

I do hereby give and bequeath to "THE AMERICAN MUSEUM OF NATURAL HISTORY" *of the City of New York,* .....

.....

American Museum Journal

Volume I APRIL–MAY, 1901 Numbers 9–10

NOTES AND NEWS.

BRAHMÆA CONCHIFERA.
One of the specimens in the Schaus Collection.

THE PRESERVATION OF THE SCHAUS collection of exotic moths has been assured by the transference of the specimens into new, specially constructed, vermin-proof cases. Inasmuch as other indications of the value of the Schaus Collection appear in the article on the development of the entomological department, a few supplementary statements would now seem timely.

The five thousand-odd specimens of the collection, representing the principal known genera of Old World moths, were gotten together as a study collection, for comparison with New World forms, by Mr. William Schaus, the describer of many new Lepidoptera, himself an ardent collector, and now the owner of the most complete collection of New World moths in existence.

The study collection of Old World moths was presented by Mr.

Schaus in 1897; partly in recognition of the scientific value of the gift, the Trustees soon after made the donor a patron of the Museum. The collection is especially rich in representatives of the *Bombycidæ* (Spinners), *Noctuidæ* (Owlets), *Geometridæ*, *Hepialidæ*. It contains many type specimens and species authentically determined by comparison with British Museum types. This feature of authenticity makes the collection highly useful to specialists and students, who are further benefited by its accessibility in the American Museum.

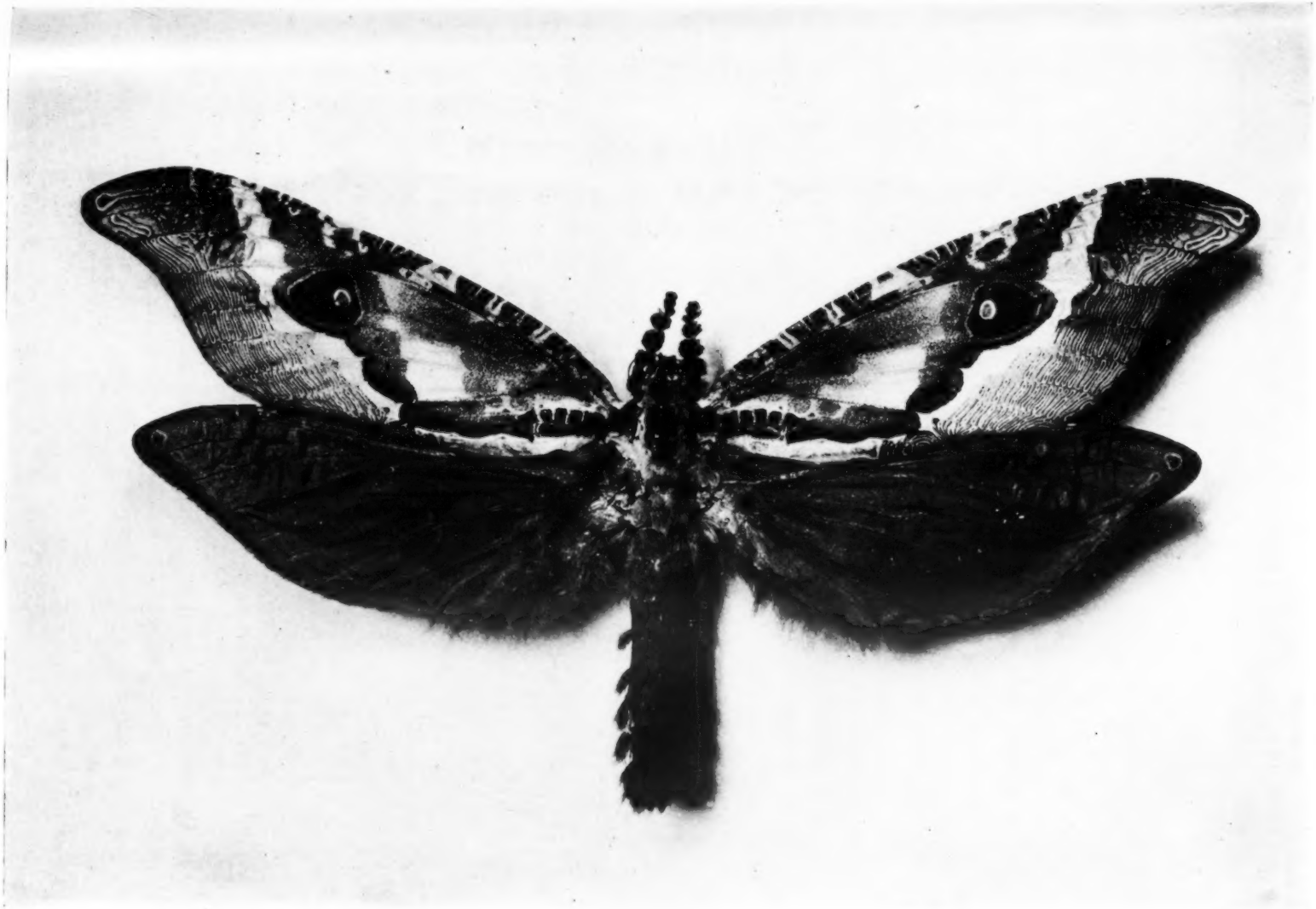
As more or less detailed references to the Museum collections of moths and butterflies are made from time to time in these columns, it may be permissible to indicate briefly the chief characters of the Lepidoptera and the differences between moths and butterflies; perhaps in strictness rather an affair of the text-books.

The members of the order Lepidoptera have four wings, which are membranous and covered with overlapping scales. The scales are modified hairs. The mouth parts are adapted not for biting, as in primitive insects, but for sucking. The metamorphosis is complete.

The order is often considered as being divided into two sub-orders: the Moths (Heterocera) and the Butterflies (Rhopalocera); the Moths being designated in a general way as the Nocturnal Lepidoptera, the Butterflies as the Diurnal Lepidoptera. The moths on the whole are the less specialized in structure. When at rest most moths hold the wings horizontally, whereas typical butterflies hold them in a vertical position. However, many of the Skippers (family *Hesperidæ*, the most primitive butterflies) present an intermediate condition, in that the fore-wings are held vertically, while the hind-wings are extended horizontally.

The antennæ of moths are of various forms (whence the term Heterocera), though usually thread-like or feather-like; those of butterflies have (typically) a knobbed extremity (whence the term Rhopalocera).

Most moths have a *frenulum* or bristle attached to the first rib of the hind-wing near the base, which passes through a loop on the under side of the fore-wing, thus assuring the simultaneous action of the fore and hind pairs of wings in flight. In all the butterflies and in the more specialized moths, this device is superseded by the overlapping of the hind-wings by the fore-wings. In both moths and butterflies, as well as in other insect orders, the ribs or veins of the wings are



ZELOTYPIA STACYI.
One of the hepialids in the Schaus Collection.

characteristic in number and arrangements. These characters are of great importance in classification. The abdomen of moths is stout, that of butterflies slender, the Skipper butterflies, however, resembling the moths in this respect also. In correlation with the slow, waving flight of most moths and butterflies, the segments of the thorax are not closely consolidated, except in the hawk-moths and others, where the flight is strong and rapid.

The illustration on page 131 shows one of the Australian hepialids or Swifts. The Swifts (family *Hepialidæ*), and the very minute *Micropterygidæ*, differ from all other moths and butterflies, first, in the great similarity of the fore- and hind-wings, both in form and in the number and arrangement of the veins (an exceedingly primitive feature); second, in the possession of a small lobe or *jugum* on the inner margin of the fore-wing near its base. The jugum extends under the costal margin of the hind-wing, while the greater part of the inner margin of the fore-wing overlaps the hind-wing. As does the frenulum of other moths, this device secures the simultaneous action of all four wings in flight. It is, however, a fundamentally different structure; taken in connection with the primitive character of the wings and with the wide geographical separation of the different species of the two families, it is thought to indicate that these genera are the remnants of what was in time past a numerous group, perhaps comparable in number and variety with the butterflies or moths of the present.

W. K. G.

Mr. Frederick A. Constable has presented to the Department of Conchology a very large selection of shells from his private cabinet. Neither the number of separate specimens nor the number of species has been exactly determined, but of the former there are probably some 25,000 and of the latter 5000.

The classification and arrangement of these shells must be delayed, owing to the pressure of other work; but a glance over these specimens shows their admirable preservation and careful mounting. Identifications are complete. The univalves are by far the most largely represented, and amongst these many minute species are conspicuous. The *Neritidæ*, *Turbinidæ*, *Ampullaridæ*, *Melanidæ*, *Lymneidæ*, *Chitonidæ*, *Eulimidæ*, *Calyptræidæ*, *Bulimidæ*, *Helicidæ* are numerously represented. Minute forms are common; thus *Columbella minuta* Gld., from Hongkong, *Eulima Hemphilli* Dall, from Florida, Cingulinas from the Pacific, minute Tornatinas and Cylichnas, are seen in a hasty inspection.

In view of accessions such as this it is impossible not to emphasize the growing need of a large, commodious, and properly spaced shell hall. A very considerable proportion of the General Collection, including all the Unios, is now hidden from view in drawers under the desk cases. A different method of installation, especially of the small shells now exhibited, is necessary.

A small experimental aquarium containing pond gasteropods will soon be placed on exhibition.

L. P. G.

IMPORTANT GIFT TO THE LIBRARY.—General Egbert Viele, a member of the Museum, has recently enriched the library by the donation of 1200 volumes, 960 numbers of serial publications, 1833 pamphlets, and 66 valuable maps. The bound volumes include works on Travel, Biography, Natural History, Geology, Mineralogy, History, Commerce. The scientific periodicals will be of great use in supplying missing numbers of publications already in the library. The old maps are valuable, for instance in local archæological research. The Topographical Atlas of New York (1874) is the work of the donor, General Viele; it marks the original character of the land, revealing the great extent of made land in this city.

Mr. Ernest Schernikow, another member of the Museum, has donated forty-six volumes on Mineralogy, including crystallographic atlases, and a series of mineralogical manuals, which illustrate the development of the science.

IN THE LAST NUMBER OF THIS JOURNAL, through an omission in transcription the name of Hon. Abram S. Hewitt did not appear on the list of Trustees constituting the Nominating Committee.

FIVE SPECIMENS OF MUSK-OXEN collected by Lieut. R. E. Peary, U. S. N., in Grinnell Land (Arctic America, opposite the northern coast of Greenland) have been mounted and placed on exhibition in the Hall of North American Mammals. The specimens will ultimately be brought together into a group, which will form one of the series illustrating the mammalian fauna of North America. The material belongs to a new form of Musk-Ox recently described as *Ovibos moschatus wardi*. The name was proposed by Mr. Richard Lydekker of the British Museum, in a brief note in *Nature*. It was based on two specimens from East Greenland.

In a recent contribution to the Museum Bulletin,* entitled "The Musk-Oxen of Arctic America and

* Bull. Amer. Mus. Nat. Hist., Vol. XIV, Art. VII, pp. 69–86. Author's Edition, Mar. 27, 1901.

ONE OF THE NEWLY MOUNTED SPECIMENS OF OVIBOS WARDI.

Greenland," Dr. Allen shows that the new form differs from the typical *Ovibos moschatus* not only in the possession of "a large whitish patch on the face as well as in certain other details of coloration" (Lydekker) but more markedly in the shape of the basal portions of the horns, and in the size and contour of the hoofs. The adult males of the new form also possess a characteristic "saddle mark" of light brown on the middle of the back. These differences are thought sufficient to mark *Ovibos moschatus wardi* as a distinct species (*O. wardi*) instead of as a variety.

Dr. Allen's review of the reports of explorers and others shows that the range of the new form extends from Ellesmere Land of northernmost Arctic America, across Smith Sound and Robeson Channel to the west coast of Greenland, as far south as Melville Bay; thence stretching northeastward along the north coast of Greenland and down the east coast as far as King William Land.

The present range of *Ovibos moschatus*, on the other hand, is limited to the Arctic Barren Ground region to the eastward of the Mackenzie River. Although its eastern limit cannot be positively stated, the range of *Ovibos moschatus* appears to be separated from that of *Ovibos wardi* by a broad zone of insular areas and estuaries. The author infers that "when Musk-Oxen ranged far to the southward of their present limits [as shown by the occurrence of fossil remains of Musk-Oxen as far south as Kentucky] they doubtless had a continuous distribution over a large part of North America, and have become differentiated in comparatively recent times through separation in their gradual retreat northward."

The occurrence of Musk-Oxen in Alaska is fully discussed. It is shown by abundant evidence that while the range of *Ovibos moschatus* formerly extended across Alaska, the recent specimens alleged to have been taken west of the Mackenzie River have really been brought to trading posts on the Alaskan coast by whaling ships coming from the east. W. K. G.

In order that the educational value of the great collections already in the Museum may be increased, there is needed a much further development of the principle exemplified by the mounted groups in the departments of zoölogy and anthropology. The tribal groups show material elements of the culture of a race not as isolated facts but in relation to each other and to man. The groups of mammals and birds represent the living creatures not as mere stuffed skins, but in relation to each other and to their natural surroundings.

This principle will no doubt be worked out ultimately in manifold ways, as fast as the means are provided by citizens of New York. Recently the Museum has been fortunate in receiving two important gifts for the development of such particular suites of specimens in the departments of ornithology and ethnology. As to these, more specific statements will be made later.

Future donations of this character will, it is hoped, provide for the preparation of various series of mounted specimens illustrating the structure and adaptations of the skeletons of the back-boned animals. A brief series of disarticulated skeletons, symmetrically arranged, illustrating in a broad way the comparative anatomy of fishes, batrachians, reptiles, birds, and mammals, would form a proper introduction to sets of mounted skeletons of these different vertebrate classes, representing the principal families and genera. The specimens would be

grouped zoölogically, each one mounted in a characteristic attitude, with frequent diagrams showing the relations of the skeleton to the body, and with careful, artistic drawings of the living animals. The classification of the vertebrates would be explained in guide cards that refer to the specimens.

But there is apparently no limit to the fascinating topics of osteology that with even moderate resources can be illustrated in this way. There might be various series showing the development, evolution, and adaptations of the teeth in vertebrates; the evolution and adaptations of the limbs, especially as organs of flight; the adaptive modifications of the skull and of its parts, as, for example, of the beak in birds. Of prime importance is the illustration of the far-reaching natural laws discussed in "The Variation of Animals and Plants under Domestication," and in similar great works. The beauty and extreme instructiveness of such exhibits is well proven in the British Museum and in the United States National Museum at Washington. W. K. G.

A SERIES OF SPECIMENS illustrating the culture of the ancient Indian inhabitants of New York has been placed on exhibition in the Hall of North American Indians. The specimens are selected mainly from those gathered during the course of the local archæological investigations carried on by the Museum. The exhibit is carefully arranged on glass shelves in two "A" cases, and the general effect is both comprehensive and artistic.

The specimens in the first "A" case suggest the mode of life of the ancient Algonquin tribes of this region, while those in the second bring out the art and the special characteristics of their conquerors, the Iroquois. Noteworthy are the stone pipes of elaborate design, the arrowheads, celts, and "banner stones." The pottery vessels, carefully reconstructed from numerous fragments, are particularly valuable. They show geometric ornamentations, consisting for the most part of oblique parallel lines, and, occasionally, conventionalized representations of the human face. Evidences of later contact with white men are trade pipes and hatchets of early English and Dutch types. Some slate knives closely resemble those now used by the Esquimaux. A stone celt in its original wooden handle is unique—at least here in the eastern States.

The exploration of Indian sites in the vicinity of the city is being continued. It is hoped that the expenses of the formation of this important local exhibit will be met by special gifts and contributions.

A NEW RACE OF THE GREAT BLUE HERON.

AN ethnological collection brought to the American Museum of Natural History from Queen Charlotte Island, B. C., by Dr. Franz Boas, in 1888, contained the heads and necks of two Great Blue Herons so remarkable in their intensity of color as to suggest that the Great Blue Heron, like many other Northwest Coast birds, had been affected in color by the humid climate of that region.

Since the date named, although frequent efforts have been made to secure a complete specimen of the Great Blue Heron from this region, the attempt was not successful until February, 1901, when at Skidegate, Queen Charlotte Island, John R. Swanton, of the Jesup North Pacific Expedition, whose services in this connection were enlisted through the kind coöperation of Dr. Boas, procured a very beautiful adult example. This specimen fully confirms the suspicions aroused by the heads and necks previously mentioned, and shows the Great Blue Heron of the northwest coast region to be a strikingly differentiated form, which, in recognition of his services to the zoölogy of the region it inhabits, has been named *Ardea herodias fannini* after Mr. John Fannin, Curator of the Provincial Museum at Victoria.

This Heron differs from the Great Blue Heron chiefly in its darker colors, the upper parts, for example, being slate-black instead of bluish gray, and it is therefore a further and, because of the Great Blue Heron's comparatively slight variation in color throughout a wide range, exceedingly interesting illustration of the effects of climate on the colors of animals.

As is well known the rainfall of the Northwest coast, from Oregon northward, is heavier than that of any other part of North America, an annual precipitation of over 100 inches being not infrequent. As a result of the humid climate of this region the animals inhabiting it are of exceptionally dark or saturated color. Thus, among birds, over thirty subspecies or climatic varieties have been described from the northwest coast and without exception they are darker, more richly colored, or more heavily barred or streaked than any other representatives of their respective genera. Their characteristics are well shown by comparison with their allies of arid regions. For instance, the Song Sparrows of the Northwest Coast are rich deep umber in the color of the upper surface while those of the arid Great Basin region of Arizona, where the rainfall rarely exceeds

Left-hand figure. Study specimen of Song Sparrow (*melospiza melodia guttala*) from the humid Northwest Coast.
Right-hand figure. Study specimen of Song Sparrow (*melospiza melodia fallax*) from the Arid Great Basin.

six or eight inches, have the same parts of a light sandy tint, as is indicated by the accompanying photographs of specimens from both regions. So different are these birds, in fact, that even to the untrained eye they would appear to be distinct species; but in passing from the range of one to that of the other it will be found that the changes in climate encountered are paralleled by related changes in the colors of the Song Sparrow. In other words, as the climates intergrade so do the birds. Ornithology furnishes many similar cases and they constitute eloquent exemplifications of the evolution of species by environment. F. M. C.

THE DEVELOPMENT OF THE AMERICAN MUSEUM OF NATURAL HISTORY.

(Continued.)

IN 1889, after a proper review of the material in hand, Mr. Beutenmüller under Mr. Jesup's encouragement began the preparation of specimens for the 'Jesup Collection of Economic Entomology,' which by the end of the year 1890 contained forty groups, large and small. These were exhibited with the Jesup Collection of Woods. Together with a score of carefully prepared water-color illustrations, they represent the life histories of insects injurious to forest and shade trees and show the nature of the injury done to the leaves and wood.

In 1890 the collection of insects which had been gathered, or, more properly, bred, by Dr. S. Lowell Elliot, was presented to the Museum by his widow, Mrs. Margeritha

Schuyler Elliot. The collection was a remarkable one, and consisted of one hundred and forty cases, containing about six thousand six hundred specimens of butterflies and moths in absolutely perfect condition. Almost all the butterflies and moths were bred specimens, and many of our rarer Lepidoptera are represented by entire broods, showing the variation and intergradation of the species. The suites of *Datanas* and *Limacodes* were at that time the largest and finest that had ever been brought together. Almost all the specimens in this collection were obtained in New York City and vicinity.

The material for study and exhibition increased with great rapidity. The curator himself added thousands of specimens, and the Museum became the possessor, almost simultaneously, of two great collections of butterflies: the James Angus and the Harry Edwards collections, numbering respectively thirteen thousand and two hundred and fifty thousand specimens. The Harry Edwards Collection contained hundreds of type specimens and was one of the largest private collections in the world. There were also added numerous examples of insect architecture, of insect mimicry, and of the destructive effects of gall insects on plants. By these acquisitions the entomological interests of the Museum were raised at one step to a really prominent position.

The period of these material accessions was also marked by the successive entomological contributions prepared by the curator for the Museum 'Bulletin.' Gradually the representatives of the great orders Coleoptera, Hymenoptera, Hemiptera, Orthoptera, Neuroptera, assumed their proper relations in the public halls, the insect ranks having been greatly augmented by the valuable gifts of Mrs. William H. Bradford, Dr. Francis Child Nicholas, Mr. J. W. Drexel.

Especially noteworthy is the collection of exotic Lepidoptera presented by Mr. William Schaus. The five thousand specimens in this collection include numerous types and cotypes, and many African, Indian, and Australian moths of preëminent beauty and rarity.

The most sumptuous gift of recent years, which, through the sustained enthusiasm of the donor, has not yet ceased expanding, is the collection of butterflies presented by the Very Rev. Eugene August Hoffman, D.D., LL.D., etc. The specimens have been most critically selected and attractively mounted. Dr. Hoffman began with the butterflies found in America north of Mexico, and purchased a collection of 475 species and 1650 specimens. Continuing his patronage, Dr.

Hoffman authorized the curator to extend the limits of the collection so as to include the more important species of the world, and a beginning has been made in the securing of specimens from the rich collecting grounds of Mexico, Central and South America, Europe, Asia, Africa, Indo-Australia, and Australia. The final installation of the collection in the new quarters assigned to the Department will bring out the morphological and geographical relations of the different families with diagrammatic clearness.

While the growth of the Entomological Department has been encouraging, and while no pains have been spared to develop both the scientific and popular features of the collections, there is still great need in certain directions—notably in the matter of the local collections, which show only the adult stage instead of the complete life history of the insects. Very much to be desired also is a series of diagrams and dissections illustrating insect anatomy and the characters used in classification.

L. P. Gratacap.

(To be continued.)

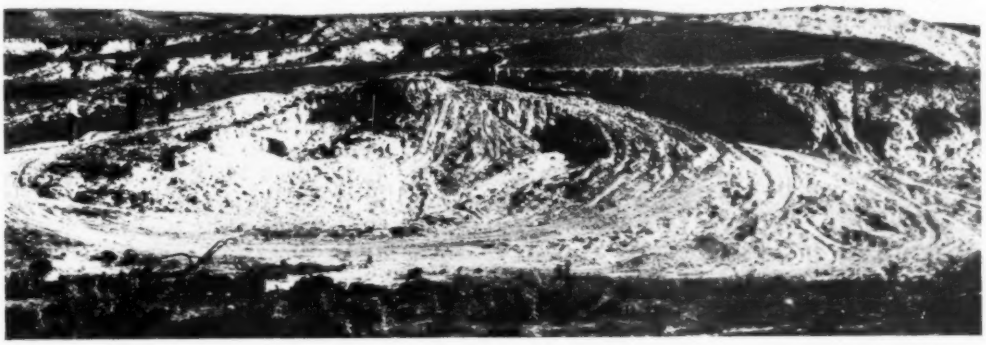
The portion of the Hoffman Collection already on exhibition has recently been transferred to the new gallery in the East Wing.

EXTRACTS FROM THE REPORTS OF FIELD PARTIES SENT BY THE DEPARTMENT OF VERTEBRATE PALÆONTOLOGY IN SEARCH OF FOSSIL MAMMALS AND REPTILES, 1900.

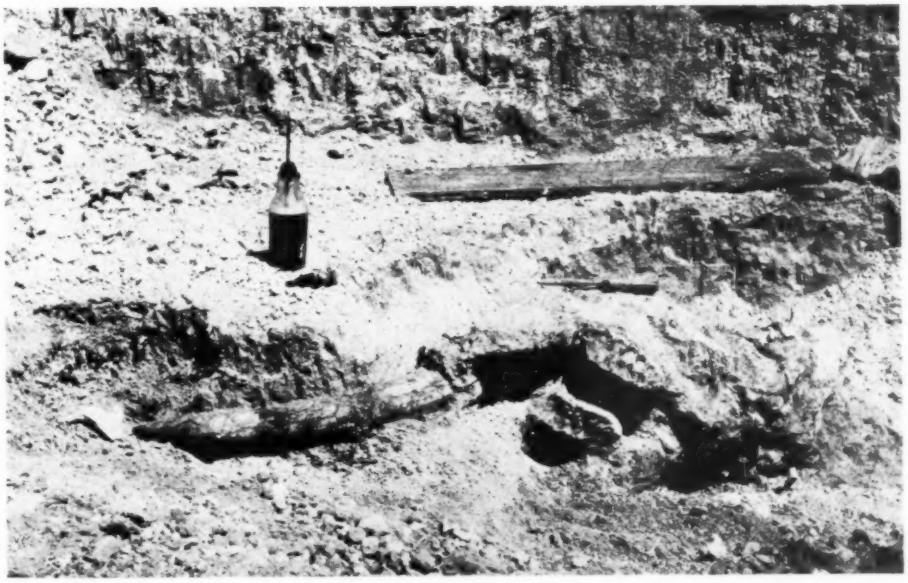
ROM the report of Mr. J. W. Gidley, who conducted an expedition into the Loup Fork (Upper Miocene) and Blanco beds of Texas, we excerpt the following:

"The party [including Mr. Hans W. Zinsser of Columbia University] left Clarendon on the 26th day of July travelling south, crossing Mulberry Creek and Prairie Dog Town Fork of Red River east of the plains and ascending the eastern escarpment of the plains by a very steep and rugged trail. . . . From this point [where the escarpment again turns south] we abandoned all trails and travelled along the edge of the plains south-southwest, keeping as near the escarpment as possible, always sending the wagon around the heads of the numerous deep, short cañons cutting back into the plains, whose side walls are so steep and rugged that many of them cannot be crossed even on horseback and none of them with a wagon. With the use of the saddle horses we explored the 'breaks' between camps, thus finding that a large region could be explored with the loss of very little time. . . .

"The exposures examined by our party along this region—which are evidently Loup Fork Beds—seem to be entirely



STRIPPING THE BONE-BEARING LAYER IN SEARCH OF FOSSIL HORSE REMAINS. SHERIDAN BEDS OF TEXAS.



THE NEW MASTODON SKULL IN PROCESS OF EXCAVATION, SHOWING RIGHT TUSK, UPPER TEETH, AND LOWER PART OF SKULL. BLANCO BEDS OF TEXAS.

barren of fossils. Therefore after following along the escarpment in the manner described for a distance of about forty miles, we turned away from the 'breaks' and started by as direct a route as possible to Mount Blanco where we arrived August 2d. The prospects here seemed rather discouraging, for it was soon seen that the fossil bearing beds were very limited in area, being less than two square miles in extent, and they at first seemed not to be rich in any but very fragmentary fossils; however our diligent search was rewarded by the discovery of several very valuable specimens, much the most important of which was a skull nearly complete, and lower jaws, five cervical vertebræ, a scapula, fragments of the bones of one fore limb, and several more or less complete ribs, all belonging to one individual of a primitive species of Mastodon which is probably new to science, and which promises to throw some light on the very obscure ancestry of modern and pleistocene elephants. All of this valuable specimen that was visible on the surface, was a small quantity of rib fragments and part of a limb bone, which the writer discovered protruding from and scattered down the slope of a steep bank of sandy clay, very near the bottom of a little cañon or gully. Following up the 'lead' the writer soon exposed the point of a tusk from which the matrix was carefully removed. Tracing it back into the bank about two and one-half feet it was discovered that the proximal end was still held in its socket in the skull. Great then was the rejoicing in camp that night for at one stroke we had discovered a specimen of such rare value (it being the first skull of its kind ever found) that we felt we were amply rewarded for all the hardships we had already undergone and the labors we were likely to encounter for some time to come."

The report of Mr. Barnum Brown, who conducted an expedition into the Ceratops Beds (Upper Cretaceous) of South Dakota and Wyoming, reads, in part, as follows:

"[Near Cheyenne River] . . . I found specimen No. 8 . . ., a nearly complete skeleton of *Diclonius* (*Claosaurus?* *), consisting of skull, lower jaws, vertebral column, ribs, and petrified tendons, embedded in stratified sandstone resembling a concretion. The extreme caudal end of this specimen was gone, having been eroded by recent rains. A femur, a few petrified tendons, and the pubes of *Diclonius*, together with a complete carapace and plastron of a turtle and a *Triceratops* pubis were found in soft sand surrounding the hard sandstone matrix of the skeleton. This specimen was taken up in five large sections encased in plaster jackets, two of them weighing over two tons apiece.

"In the sandstone matrix surrounding this specimen and in sandstone close by were found impressions of leaves, ferns, palms, rushes, and grasses,—a veritable herbarium of this period, in which I made out and collected nineteen different species. I respectfully point out the possibility of reproducing this foliage in wax for a foreground, when this specimen is mounted. While working this specimen I discovered No. 12, a carnivorous dinosaur. . . . The bones of this specimen were disassociated and scattered, necessitating the removal of a bank of clay, forty feet along the face of the ex-

* *Claosaurus*, a beaked dinosaur of medium height (10 ± feet) resembling the *Iguanodon* of Europe.

posure, and back into the hill a distance of fourteen feet. In many respects this interesting specimen resembles *Ceratosaurus** of the Jurassic formation. It consists of lower jaws (having the large foramen characteristic of *Ceratosaurus*), serrated teeth of uneven height, joined by cartilage not anchylosed. . . . Numerous plates varying from a half inch to six inches across, always found closely associated with ribs, formed the dermal armature. . . . Among the bones were the teeth of *Hadrosaurus*, † *Palæoniscus* ‡ . . . scales of fish and small bones,—all evidences of the animal's last meal. . . .

"In conclusion I wish to mention the finding of three much worn pebbles in the matrix surrounding the cervical vertebræ of *Claosaurus*, preserved in the collection. These stones are metamorphic, about the size of an egg, and are never found in the Ceratops Beds to my knowledge. There seems little doubt that these stones were in the flesh of this specimen when entombed and were probably used in the mastication of food.§ . . ."

The total thickness of the Ceratops deposits was determined by a trigonometrical method to be about 3066 feet, the data being: the dip of the strata, the elevation of the topmost stratum at a given point, and the length of a base line.

**Ceratosaurus*, a horned carnivorous dinosaur.

†The Duck-billed Dinosaur.

‡An extinct genus of ganoid fishes.

§Mr. Brown regards the non-masticatory character of the teeth as in harmony with the hypothesis that *Claosaurus* had a bird-like gizzard. Moreover, similar stones are frequently found associated with the remains of Mosasaurs (marine saurians).

An expedition under Mr. Walter Granger was sent into the Jurassic region of Colorado and Wyoming. Many miles of escarpments in Colorado were thoroughly prospected but without success. However, "only a comparatively small area has so far been examined, and although success has not yet attended the efforts it is not impossible that valuable deposits may be found in the future." In Wyoming the expedition resumed work at the famous Bone Cabin Quarry* and in the Como Bluffs, with much better success.

"The first cutting was made at the point where the work was abandoned on the year previous, *viz.*: the northwest corner. During the season three separate strippings were made uncovering an area of 1400 sq. ft. of the bone-bearing layer. A small section of this area proved barren, but for the most part bones occurred in fair abundance and averaging in quality better than those uncovered in former seasons in the quarry. With very few exceptions all inferior bones were discarded; these represent about one third of the whole number excavated. None of the soft blue clay in which all of the collection of 1898 was found was encountered, the bones occurring in sandstone of various degrees of hardness. The more noticeable features of the third collection from the Bone Cabin Quarry are the absence of any complete feet and the presence of considerable skull material

*So named from the fact that the walls of a sheepherder's cabin had been built out of boulder-like fragments of dinosaurs found on the ground near the quarry.

PACKING DINOSAUR BONES, ENCASED IN PLASTER, AT THE BONE CABIN QUARRY.

and parts of small dinosaurs of the Hallopus type. The usual methods of collecting were followed except that more care was exercised in covering the exposed surface of the bones with tissue paper to prevent the adhesion of the plaster bandages. The experiment was tried of using, under the plaster, a covering of paste bandages. This was found to be practicable in dry weather and it is undoubtedly of advantage in working out delicate bones such as vertebræ and skulls.

"In the Como Bluff exposure Mr. Thomson located a connected series of seven cervical and nine dorsal vertebræ of the great herbivorous dinosaur *Diplodocus*, together with seven loose dorsal ribs and several pairs of cervical ribs in position.

"The work of excavating was rendered somewhat arduous, first from its occurrence at a point of the bluff rather difficult of access, and second, from the steepness of the bluff directly over the prospect, necessitating a vertical cut of over 20 feet, which had to be done entirely by hand.

"The entire season's collection in this vicinity amounted to 47 boxes, of which 27 were from Bone Cabin Quarry, 11 from the Diplodocus Quarry, and 9 (mostly small) miscellaneous collections, representing a gross weight of 21,000 lbs.

"Diagrams of both Bone Cabin and Diplodocus Quarries were made, and a geological section from near the mouth of Sheep Creek to the southern side of the Como Anticlinal was drawn by Dr. Loomis. Mr. Thomson obtained a series of some fifty negatives from both Colorado and Wyoming, illustrating the geology, work in quarries, camp life, etc."

In the months of October and November, 1900, another expedition, under Mr. G. R. Wieland of Yale University, made a reconnoissance of the Jurasso-Cretaceous Rim of the Black Hills, South Dakota. Among the material secured were: portions of the skeleton of *Morosaurus*,* a femur of *Camptosaurus*, portions of the skeleton of *Brontosaurus*,† a portion of the shield of some armored saurian presumably allied to *Stegosaurus*.‡ Important stratigraphic results were worked out; the report is accompanied by tables showing the character and thickness of the strata of various sections. W. K. G.

* A large herbivorous dinosaur with a short, deep lower jaw, and a short, high skull.

† One of the largest of the herbivorous dinosaurs.

‡ A distinctive feature of *Stegosaurus* was the high, arched back, with a double row of more or less triangular plates set vertically on each side of the backbone, continuous with which were a double row of pointed spines on the tail.

MEMOIRS OF THE AMERICAN MUSEUM OF NATURAL HISTORY.

II.—ANTHROPOLOGICAL SERIES.

(Continued.)

IN the previous section of this review there was given a summary of the principal anthropological explorations and expeditions maintained by the Museum, which furnish material for exhibition and research. The object of the Jesup North Pacific Expedition, namely, the investigation of the tribes of the whole coast of the North Pacific Ocean, was explained; the first two papers on the Jesup Expedition, "Facial Paintings of the Indians of Northern British Columbia," and "The Mythology of the Bella Coola Indians," both by Dr. Boas, were reviewed.

These papers offer definite answers to certain circumscribed problems: first, the relation of the geometric to the less conventionalized designs in the art of the Northwest Coast; second, the origin of a Northwest Coast mythology. They are more or less complete in themselves, and of especial interest to the layman as illustrating the nature of ethnological investigations.

But the full meaning and value of these and of the other contributions to the series are, of course,

cumulative. One should not lose sight of the simple fact that the laws back of natural phenomena cannot be inferred until after the phenomena have been described and classified adequately. "We see that the growth of human culture manifests itself in the growth of each special culture. . . . We must, so far as we can, reconstruct the actual history of mankind, before we can hope to discover the laws underlying that history."* Accordingly these papers are largely descriptive and historical. One ought not to be disappointed because they do not seem to contain great generalizations.

The paper on the facial paintings referred to certain tribes,—Tlingit, Haida, Tsimshian, Nootka, Kwakiutl, which, although speaking different languages, have many well-marked traits of culture in common; for example, the peculiar method of adapting the animal subject to the decorative field by means of distortion and dissection. These are the typical "tribes of the North Pacific Coast." The Bella Coola, whose mythology was discussed in the review of the second paper, resemble the neighboring tribes of the coast in culture, but are not closely related to any of them. They are, in fact, a Salish tribe.

*Franz Boas, quoted in this journal, Vol. I, Nos. 7–8, 1901, pp. 116, 117.

The principal Salish tribes are the Coast Salish, Lillooet, Shuswap, Bella Coola, Ntlakapamuk (Thompson Indians), Okanagon.* The territory of the Salish tribes may be said in a general way to lie to the southeast of that of the North Pacific Coast tribes, both on the coast and, in the interior, along the banks of the Fraser and Upper Columbia rivers. On the northeast, Salish territory once extended to about the fifty third parallel. On the southeast it extended into Montana. Salish tribes were also to be found in the southeastern part of Vancouver Island. Although these tribes were characterized by a "considerable diversity of customs and a great diversity of language,"† there is sufficient similarity between the word-roots of the different dialects to show that they should be classed together under a single linguistic family or stock, the Salishan. It may be well to state that among the native tribes of America north of Mexico there are generally recognized about fifty-eight such linguistic stocks, all of which seem to be independent of each other in origin. An investigation of the culture of the tribes speaking Salishan languages is one of the objects of the Jesup Expedition. The memoir of Mr. James

* See map in previous number of this journal.

†J. W. Powell, Ann. Rept. Bureau of Ethnology, 1885–86, p. 104.

Teit on the Thompson Indians, the fourth paper of the series, illustrates very fully the culture of an important Salish tribe.

Anthropology I, Part IV.—The Thompson Indians of British Columbia. By James Teit, pp. 163–392. Pll. XIV–XX.

Dr. Franz Boas, the editor of the memoir, gives preliminary information as follows:

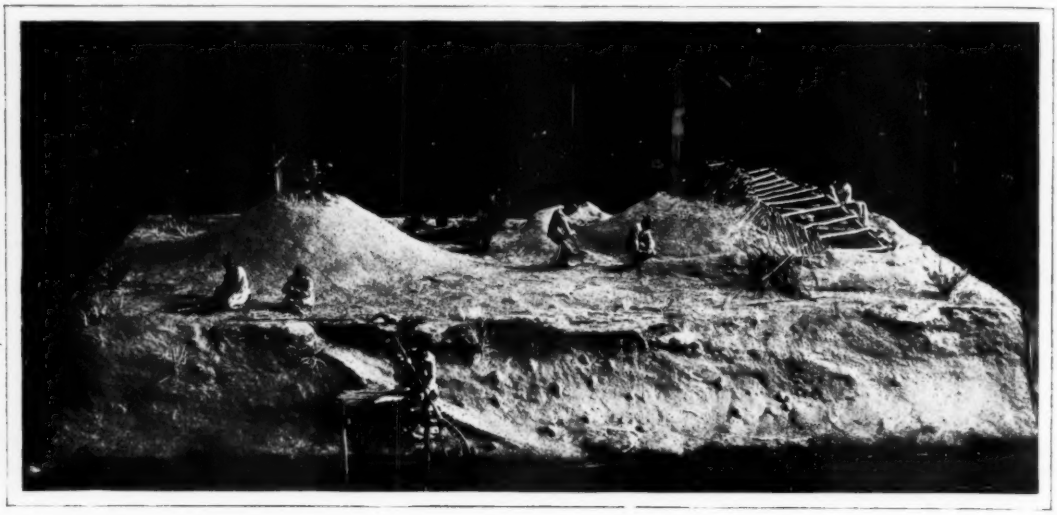
"The following description of the Thompson Indians is based on two manuscripts prepared by Mr. James Teit,—the one a description of the Upper Thompson Indians . . . ; the other a description of the Lower Thompson Indians, . . . as a result of work done by Mr. Teit for the Jesup North Pacific Expedition. To these manuscripts have been added notes furnished by Mr. Teit, explaining the uses, and methods of manufacture, of specimens which he collected for the expedition. Other information was furnished by him in reply to inquiries of the writer concerning questions that seemed of interest. The detailed descriptions of methods of weaving, and the patterns for costumes, are based on examination of specimens in the Museum. The chapter on art and the conclusion were written by the editor. The former is the result of his study of specimens and photographs, and of personal inquiries conducted with the assistance of Mr. Teit.

"Mr. Teit is fully conversant with the language of the Thompson Indians, and, owing to his patient research and intimate acquaintance with the Indians, the information contained in the following pages is remarkably full. Physical characteristics, language, and the mythology and traditions of the people, are not included in the present description."

The habitat of the Thompson Indians is "the southern interior of British Columbia, mostly east of the Coast Range, but it extends far into the heart of that range. It is about a hundred miles in length, by ninety in breadth. Through this territory flow three rivers,—Fraser River; its principal tributary, Thompson River; and a smaller tributary of the latter, Nicola River. In the valleys of these rivers, or in close proximity thereto, are found the principal villages of the tribe, while the country on either side is their hunting-ground."

The country of the Lower Thompson Indians is extremely rugged. The rainfall is abundant, and the whole country is clad with heavy timber, mostly fir and cedar. Game is scarce, so that the Indians depend mostly on the products of the streams for their livelihood. The country of the Upper Thompson Indians is far less rugged. The valleys are covered with sagebrush and other evidences of a dry climate, the mountains with grass and scattering timber. Game, especially deer, is much more abundant. These different environments have to some extent reacted differently on the culture of the inhabitants, the Lower Thompsons being expert canoeists and fishermen, and the Upper Thompsons better horsemen.

Formerly deer, salmon, roots, and berries were the staple food of the tribe. Deer was more important to the upper division, while salmon was the principal food of the lower division. In those days a large portion of the tribe lived in the mountains during the greater part of the year, moving about from one root-digging or deer-hunting ground to another, according to the harvest-time of certain



SMALL ETHNIC GROUP ILLUSTRATING THE LIFE OF THE THOMPSON RIVER INDIANS.

roots and berries, or as the deer changed their feeding grounds during the seasons. The men engaged in hunting and trapping, while the women attended to the gathering and preparation of roots, berries, and other food. Only when winter set in did they return to their winter houses.

Most of the implements and utensils of the Thompson Indians were made of stone, bone, wood, bark, skins, matting, or basketry. Work in stone, bone, and wood was done by the men, while the preparation of skins, matting, and basketry-work fell to the share of the women. There was a certain amount of division of labor, inasmuch as workmen skilled in any particular line of work exchanged their manufactures for other commodities.

For work in wood a number of tools were used. Trees were cut down by means of wedges made of elk-antler, which were driven in with stone hand-hammers. (See cut on following page.)

"The houses of the tribe were similar to those of the Shuswap and Okanagon. Like all the southern tribes of the interior, they used a semi-subterranean . . . hut as a winter dwelling. These winter houses were generally built in the valleys of the principal rivers, within easy distance of water, and were inhabited by groups of families related to each other, who, although scattered during the hunting and fishing seasons, dwelt together during the winter. . . . The size conformed to the number of people (from fifteen to thirty) to be accommodated. A spot with loose soil was selected for the site of the underground house. The person who desired to build the house asked all his neighbors to assist. Frequently twenty or thirty people came, so that the building was sometimes completed in a single day."

The summer houses were lodges, like those of the Indians of the Plains. An important structure was the "sweat-house," wherein the people fasted on certain occasions. It was semi-ovoid in shape, the framework being made of light willow wands.

The dress of the Thompson Indians, before their intercourse with the Hudson Bay Company, was made almost entirely

of dressed skins, with or without the hair. The skins were scraped and softened in the manner illustrated in the ethnic groups in the exhibition halls of the Museum. The principal articles of clothing were shirts, trousers, and robes.

Basketry-making is an important industry among this tribe. The people

STONE HAND-HAMMER AND WEDGE MADE OF ELK-ANTLER.

make various baskets of birch-bark and beautiful coiled baskets of cedar-twigs. Mat-making, weaving, and netting were also practised.

The men played a number of games, including lacrosse. There were many children's games. Games of chance were popular. Dice were made out of beaver-teeth.

The weapons of the Thompson Indians were bow and arrow, spear, knife, war-club, and tomahawk. For defence, shields and armors made of wood or of hide were used.

Before the arrival of the fur-traders, the Thompson Indians often engaged in war-expeditions. Regular tribal wars, in which one whole tribe was arrayed against another, were very rare. Most of their warfare was for the sake of plunder, adventure, or revenge. War parties numbered from five or six individuals to companies of several hundred. A man who refused to join in these war-expeditions lost the respect of his fellows. Though many of the chiefs favored peace rather than war, yet there was seldom much difficulty in obtaining men for these expeditions, many joining for the sake of the spoils, others merely from love of adventure or to obtain distinction. War parties were not highly organized. Slaves were taken, but were often ransomed by their friends, or after some years were allowed to escape. Excepting in the case of the so-called Frazer River War of 1858, the relations of the tribe with the whites have been peaceful.

The Thompson Indians had neither hereditary chiefs nor a recognized nobility. The rank of each person was determined by his wealth and his personal qualities. Their "chiefs" were therefore men of the tribe noted for wealth, wisdom, oratorical powers, or prowess in war. . . . When at the same time wise and wealthy, they exerted a very great influence over the people, who willingly obeyed them. Some of them were looked upon as the chief men of certain large districts, the people negotiating through them with strangers; yet they seldom or never acted in matters of public interest without obtaining the consent of all their people. Wealthy persons also held prominent positions in the tribe. The more liberally they gave of their riches, the more highly they were thought of; hence public feasts and presents were frequently given. They made a point of treating

strangers well, that they might become known among the people of other tribes.

Under these conditions the title of "chief" could not be hereditary; but the fact that a man was the son of a chief gained him a certain amount of popularity. If, however, he failed to attain the necessary qualifications, he was not called "chief," nor would he be considered in any way different from the mass of the people.

The hunting territory seems to have been considered the common property of the whole tribe. The berrying and root-digging grounds were also common property.

Blood relationship was considered a tie which extended over generations, both in the male and female line. The relatives of a person killed by a member of some other tribe had to avenge his death by a war-expedition against the offending tribe. If they failed to do so, they were called "women." Time was of no account in this vendetta; and old scores were sometimes paid off after the lapse of ten or twenty years, or even after the death of the originators of the feud.

This idea of the unity of the family is most strongly brought out in the hereditary names of the Indians. Each family had certain names, and no one but members of the family was permitted to use them.

In domestic affairs each male member of age had a right to express his opinion or give his advice, although in most cases the father's or eldest son's advice was taken. The father and eldest son seem to have been looked upon as the highest authorities, although custom required that they should not do anything of importance to the family without first consulting its other male members.

It was considered the man's duty to hunt, to trap, to fish, to snare, to fight, to make all the tools and weapons, to fell trees, to instruct and advise his children, especially his sons, to help look after the horses, to look after the hunting-dogs, to be energetic, to protect his wife, and to beat her if she were lazy, or admonish her, etc.

Married women had to do almost all the work of the house. Some men, however, helped their wives in the tanning of buckskin, putting-up of lodges, etc., and often manufactured articles for them, such as root-diggers, etc. It was considered the woman's duty to carry all firewood; erect the lodges, keep them clean inside, and light the fire; gather and carry brush for beds, etc.; make all kinds of mats, baskets, sacks, and bags, as well as all clothing, including moccasins; wash and cook; dig and cure or cook roots, and gather and cure berries; help to clean and dry fish, to carry meat or game shot, and to look after the horses; dress all skins for clothing, etc.; fetch water; look after and nurse the children; and educate her daughters to be diligent in their work, and faithful and obedient to their husbands; etc.

The Indians have always been fond of gathering for feasting and talking, as they are at the present day. Feasts of all kinds took place in the winter, when the Indians were in their winter houses. Many feasts were simply social gatherings, where one family who had a large supply of food invited the neighboring families to partake of their abundance and spend a day or so in feasting or conversation. This kind of feast showed the good will and liberality of the donor.

"Although the Thompson Indians, when the white miners first came among them, had the reputation of being treacherous, they cannot be so characterized at

WOMAN DIGGING ROOTS.

the present day. As with every other people, there are both good and bad among them ; but on the whole they are more honest and industrious, intelligent and receptive, than other Indian tribes. They are quiet, sociable, and hospitable ; yet combined with the last two qualities are often pride and suspicion. Some are of a jocular, humorous temperament ; and some are courageous, determined, and persevering, although the last-named quality is not a characteristic of the tribe as a whole. Some show it, however, to a marked degree when hunting or fishing. Being proud, they are easily offended, but seldom allow their wrath to get the mastery of them. As a rule, they are not vindictive. They admire a man who is athletic, active, energetic, industrious, strong to endure, brave, hospitable, liberal, sociable, and kind. They are fond of the wonderful, of oratory, gambling, story-telling, hunting, and horseback-riding. They are not as proud-spirited as they were, nor do they take as much interest in games, athletic exercises, and fun as formerly. Disease and the knowledge that they are doomed to extinction are the chief causes for this ; while change of pursuits, and the acquirement of new ideas, also have their effect.

" At present these people, both socially and otherwise, may be said to be in a state of transition from the customs and modes of life of the past, to those at present in vogue among the surrounding whites. Although some of the old people cling tenaciously to many of the old habits and traditions, the one idea of many of the younger people is, to advance their material condition, and to copy and vie with the whites in many lines of industry, as well as in customs and dress.

" Ethical Concepts and Teachings.—It is good to be pure, cleanly, honest,

truthful, brave, friendly, hospitable, energetic, bold, virtuous, liberal, kind-hearted to friends, diligent, independent, modest, affable, social, charitable, religious or worshipful, warlike, honorable, stout-hearted, grateful, faithful, revengeful to enemies, industrious."

It is bad to be the opposites of these, the practice of virtue implying praise and reward, of vice, ridicule, censure, and requital.

Some elderly man of a household would often speak to the people until late at night, admonishing and advising them, especially the young of both sexes, how to act and live with one another; telling them the benefits of being good and the results of being evil, also giving his ideas of the future life, etc.; thus teaching them and guiding them by his knowledge and experience. In winter many nights were spent in speech-making of this kind, in relating stories of war, hunting, and other experiences, and telling mythological stories.

The mythology and traditions of the people are not formally treated in this volume. However, the author shows that while certain prayers and customs suggest that a general animism is the fundamental principle of their religion, . . . the ceremonials that were formerly in use suggest that a vague worship of nature formed also a prominent part of their beliefs.

There were many formal observances and practices, relating especially to birth, childhood, puberty, marriage.

"The principle of decorative art of the Thompson Indians is quite distinct from that of the Coast tribes. The former have the conception of animals adapting themselves to the use of man, and assuming the form of implements. The whale becomes a canoe, the seal a dish, the crane a spoon. The latter adopt this idea very rarely, but decorate their implements with symbolic designs placed on a suitable surface, but without any immediate connection with the form of the implement. In the former, the decoration depends upon form; in the latter, form and decoration have no intimate connection. Comparatively few designs are primarily decorative. Their fundamental idea is symbolic. For this reason by far the greater number of designs may be described as pictographs rather than as decorations. Nevertheless the symbol is often used for purposes of decoration.

"The symbols are mostly painted, etched, or etched and filled with colors. The Thompson Indians have not developed any great skill in graphic art. Their designs are largely attempts at a realistic representation, but the difficulties of execution have led them to adopt a number of conventional expedients to express certain ideas. They use a number of conventional designs, the meaning of which is always understood."

In the conclusion the editor states that:

"In a general way, we may say, therefore, that the Thompson Indians are in appearance and culture a plateau tribe, influenced, however, to a great extent by their eastern neighbors, to a less extent by the tribes of the coast. Their whole social organization is very simple; and the range of their religious ideas and rites is remarkably limited, when compared with those of other American tribes. This may be one of the reasons why, in contact with other tribes, the Salish have always proved to be a receptive race, quick to adopt foreign modes of life and thought, and that their own influence has been comparatively small."

W. K. G.

Officers and Staff.

President, MORRIS K. JESUP

First Vice-President, WILLIAM E. DODGE *Second Vice-President*, HENRY F. OSBORN

Treasurer, CHARLES LANIER

Assistant to the President, HERMON C. BUMPUS

Secretary and Assistant Treasurer, JOHN H. WINSER

Department	*Curator*	*Associate and Assistant Curators*
Public Instruction	Prof. A. S. BICKMORE	
Geology	Prof. R. P. WHITFIELD	Dr. EDMUND O. HOVEY (Associate)
Mineralogy	L. P. GRATACAP, A.M. (Also in charge of Conchology.)	
Mammalogy and Ornithology	Prof. J. A. ALLEN	FRANK M. CHAPMAN (Associate)
Vertebrate Palæontology	Prof. H. F. OSBORN	Dr. W. D. MATTHEW Dr. O. P. HAY
Anthropology	Prof. F. W. PUTNAM	Prof. FRANZ BOAS, *curator in charge of Ethnology* MARSHALL H. SAVILLE, *curator in charge of Mexican and Central American Archæology* HARLAN I. SMITH, Assistant Curator of Archæology
Entomology	W. BEUTENMÜLLER	
Invertebrate Zoölogy . . .	Prof. H. C. BUMPUS	

Librarian, A. WOODWARD, Ph.D.

Publications
OF THE
American Museum of Natural History.

ANNUAL REPORT: Octavo, about 80 pp.

BULLETIN: Octavo; annual; about 400 pages and 25 plates with numerous text illustrations Articles relate about equally to Geology, Palæontology, Mammalogy, Ornithology, Entomology, and (in recent volumes) Anthropology.

MEMOIRS: Quarto; issued in parts at irregular intervals, several parts being published annually. Three volumes (two nearly completed) now under way. Each part forms a separate and complete monograph, varying in size from 24 to 100 or more pages, with numerous plates mostly lithographic.

JOURNAL: Octavo, 16 pp.; monthly, except June–September inclusive; illustrated. A popular record of the progress of the Museum.

BULLETIN.

Volume I, 1881–86	Price, $5.50	Volume IX, 1897	Price, $4.75
" II, 1887–90	" 4.75	" X, 1898	" 4.75
" III, 1890–91	" 4.00	" XI, Part I, 1898	" 1.25
" IV, 1892	" 4.00	" " " II, 1899	" 2.00
" V, 1893	" 4.00	" " " III, 1900	" 2.00
" VI, 1894	" 4.00	" XII, 1899	" 4.00
" VII, 1895	" 4.00	" XIII, 1900	" 4.00
" VIII, 1896	" 4.00		

MEMOIRS.

Vol. I (not yet completed).

PART I.—Republication of Descriptions of Lower Carboniferous Crinoidea from the Hall Collection now in the American Museum of Natural History, with Illustrations of the Original Type Specimens not heretofore Figured. By R. P. Whitfield. Pp. 1–37, pll. i–iii. September 15, 1893. Price, $2.00.

PART II.—Republication of Descriptions of Fossils from the Hall Collection in the American Museum of Natural History, from the Report of Progress for 1861 of the Geological Survey of Wisconsin, by James Hall, with Illustrations from the Original Type Specimens not heretofore Figured. By R. P. Whitfield. Pp. 39–74, pll. iv–xii. August 10, 1895. Price, $2.00.

PART III.—The Extinct Rhinoceroses. By Henry Fairfield Osborn. Part I. Pp. 75–164, pll. xii*a*–xx. April 22, 1898. Price, $4.20.

PART IV.—A complete Mosasaur Skeleton. By Henry Fairfield Osborn. Pp. 165–188, pll. xxi–xxiii. October 25, 1899.

PART V.—A Skeleton of Diplodocus. By Henry Fairfield Osborn. Pp. 189–214, pll. xxiv–xxviii. October 25, 1899. Price of Parts IV and V, issued under one cover, $2.00.

PART VI.—A Monograph of the Sesiidæ of America, North of Mexico. By William Beutenmüller. Pp. 218–352, pll. xxix–xxxvi, with 24 text cuts. March, 1901. Price, $5.00.

Vol. II. Anthropology.

The Jesup North Pacific Expedition.

PART I.—Facial Paintings of the Indians of Northern British Columbia. By Franz Boas. Pp. 1–24, pll. i–vi. June 16, 1898. Price, $2.00.

PART II.—The Mythology of the Bella Coola Indians. By Franz Boas. Pp. 25–127, pll. vii–xii. November, 1898. Price, $2.00.

PART III.—The Archæology of Lytton, British Columbia. By Harlan I. Smith. Pp. 129–161, pl. xiii, 117 text figures. May, 1899. Price, $2.00.

PART IV.—The Thompson Indians of British Columbia. By James Teit. Edited by Franz Boas. Pp. 163–392, pll. xiv–xx, with 198 text figures. April, 1900. Price, $5.00.

PART V.—Basketry Designs of the Salish Indians. By Livingston Farrand. Pp. 393–399, pll. xxi–xxiii, with 15 text figures. April, 1900. Price, 75 cts.

PART VI.—Archæology of the Thompson River Region. By Harlan I. Smith. Pp. 401–442, pll. xxiv–xxvi, with 51 text figures. June, 1900. Price, $2.00.

Vol. III. Anthropology (not yet completed).

PART I.—Symbolism of the Huichol Indians. By Carl Lumholtz. Pp. 1–228, pll. i–iv, with 291 text figures. May, 1900. Price, $5.00.

Vol. IV. Anthropology (not yet completed).

The Jesup North Pacific Expedition.

PART I.—Traditions of the Chilcotin Indians. By Livingston Farrand. Pp. 1–54. June, 1900. Price, $1.50.

PART II.—Cairns of British Columbia and Washington. By Harlan I. Smith and Gerard Fowke. Pp. 55–75, pl. i–iv, with 9 text figures. January, 1901. Price, $1.00.

For sale by G. P. PUTNAM'S SONS, New York and London.
J. B. BAILLIÈRE ET FILS, Paris; R. FRIEDLÄNDER & SOHN, Berlin;
and at the Museum.

American Museum Journal.

W. K. GREGORY, *Managing Editor.*

FRANK M. CHAPMAN,
L. P. GRATACAP, A.M., } *Associate Editors.*

Published monthly, except during the months of June, July, August, September.

Single copies, 10 cents. Subscription, 1 year (8 numbers), 75 cents.

The JOURNAL is sent free of charge to the Trustees, Patrons, Fellows, Life Members, Annual Members, Officers, and Staff.

For sale by G. P. PUTNAM'S SONS, 27 W. 23d St., New York,
and at the entrances of the Museum.

Subscriptions should be addressed to A. WOODWARD, American Museum of Natural History, 77th St. and Central Park, West.

TABLE OF CONTENTS, VOL. I, NOS. 9–10.

	PAGE
NOTES AND NEWS	129
A NEW RACE OF THE GREAT BLUE HERON	137
THE DEVELOPMENT OF THE AMERICAN MUSEUM OF NATURAL HISTORY (CONT'D)	138
EXTRACTS FROM THE REPORTS OF FIELD PARTIES SENT BY THE DEPARTMENT OF VERTEBRATE PALÆONTOLOGY IN SEARCH OF FOSSIL MAMMALS AND REPTILES, 1900	140
MEMOIRS OF THE AMERICAN MUSEUM OF NATURAL HISTORY. II. ANTHROPOLOGICAL SERIES (CONTINUED)	145

The Knickerbocker Press, New York